

73rd MORSS CD Cover Page

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UNCLASSIFIED AND APPROVED FOR PUBLIC RELEASE C2 Dominance Starts Here!

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605th Test and Evaluation Squadron

C2 Dominance Starts Here!

Balancing Risks in Quick Reaction Testing



Maj Sean Fox

605 TES/TXT

DSN: 579-9121

This Briefing is: UNCLASSIFIED

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Overview

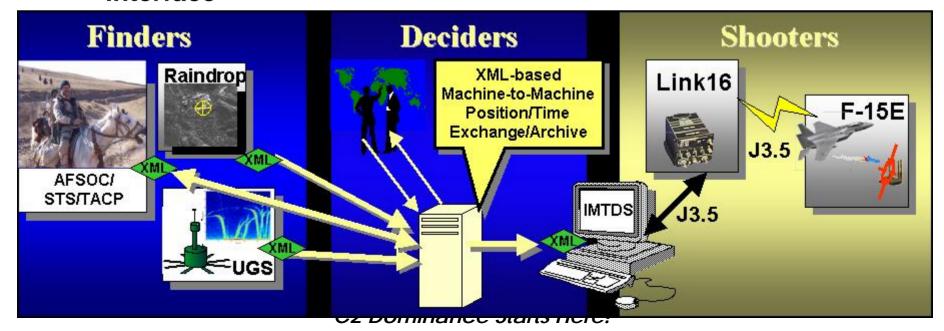
- Cursor on Target Project Background
- CoT-M2MT (SECAF Directed SOF Effort)
- Post SOF effort: re-engaging original CoT focus
- Full Summary and open Q&A



Project Background

Initial Concept Exploration

- Applied Gen Jumper's vision of integrated command and control centers to an Operation Northern Watch need for precision coordinate dissemination to F-15Es
- MITRE & ESC collaborated to prototype and demonstrate a Cursor on Target (CoT) model showing machine to machine interface





Project Background

- Technology Demonstration
 - Demonstrated technology to key decision makers
 - SECAF Roche, Dr Sambur, Gen Holland, BG (Sel) Holmes), 720th Special Tactics Group, and other key acquisition offices
- Re-Demonstrated to SECAF
 - Included 720th Special Tactics, AFRL BAO-Kit, ASC and ESC Offices
 - Outcome: Letter from Gen Hester to Gen Looney
 - CoT & BAO-Kit projects converged into M2MT



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE SPECIAL OPERATIONS COMMAND WINDOW

MEMORANDUM FOR ESCICE

27 JAN 2001

FROM: AFSOC/CC 100 Bartley St, Command Suite Hurlburt Field FL 32544-5273

SUBJECT: Buttlefield Air Operations (BAO) Kit Integration Requirements

- 1. Request ESC and AFRL's continued support in developing and fielding the BAO Kit.
- 2. As tasked by SECAF, the 720th Special Tactics Group (STG) ordered/procured the commercial/government off the shelf (C/OOTS) equipment required to complete Phase I of the three-phased BAO Kit project. With your approval, AFRL and BSC tramed with ASC's recently formed. Special Tactics System Program Office (SPC) and began BAO Kit Phase II. Phase II integrates the C/GOT equipment into a seamless family of systems that has connectivity to Cursor on Target (CoT). BareBack, Link 16, etc. These efforts have the potential to dramatically increase the combat capability of urs Special Tactics warriers, directly enthancing the effectiveness of the kill obtain. In a 22 Int of Section Tactics warriers, directly enthancing the effectiveness of the kill obtain. In a 22 Int of Section 1 and 1 and
- 3. With the SECAF's clear guidance in mind, it must be pointed out that the BAO Kit efforts made to-date by AFSOC, AFRL, ESC, and ASC, coupled with the effort to annex the Tactical Air Control Party (TAC-P) Operational Requirements Document, have garnered some procurement, production, and O&M funds starting in FY06. The 04-POM contains \$45M for BAO Kit procurement beginning in FY06 and \$500K of ROTAES funds in FY 06. While the SECAF was emphatic that the current BAO Kit funding "disconnects" would "not be a show stopper," to falfill the SECAF's direction we need to continue to work stopether on development until procurement dollars are available.
- Request ESC and AFRL continue to sustain the BAO Kit project to a point of procurement and
 production by continuing their efforts to integrate the CoT and BareBack projects throughout FY03 in
 preparation for transition to the appropriate Special Tactics SPO in FY04. AFSOC's POC is Mr. Steve
 Scott, 720 STGIDOX, DSN 579-5196, steven.scott@furthurt.af.ntl.

PAUL V. HESTER Lieutenart General, USAF Commander

ee: ESC/CX ASC/CC HQ AFSOC/XP

AIR COMMANDOS - QUIET PROFESSIONALS

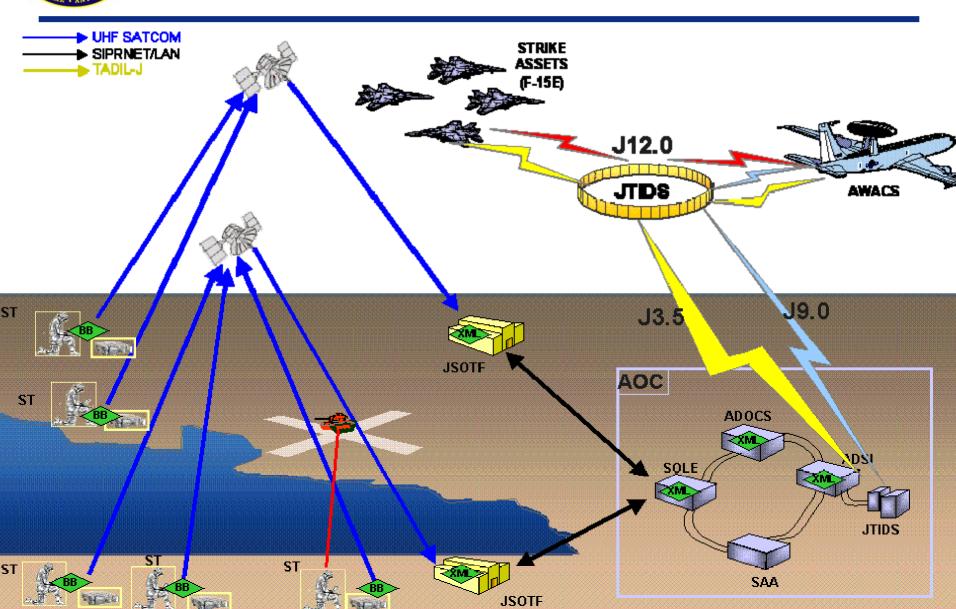


Issues to Address

- DoD Directives & Policies
 - DoD 5000.1 & 5000.2
 - Defense Acquisition Guidebook
- Key Points
 - User needs
 - AoA development
 - System development and demonstration
 - Flexibility, responsiveness, and innovation
- Mitigate risk factors
 - Type I (false positive)
 - Type II (false negative)
 - Type III (testing in the wrong places)



M2MT Special Tactics CONOPS





Test Objectives

- 1. Assess capability of BAO kit to provide <u>timely targetable data</u> to the CJSOTF/SOLE
- 2. Assess capability of CJSOTF <u>ADOCS to receive CJSOTF</u> ToughBook data from BAO kit.
- 3. Assess capability of <u>AOC TST systems to process targeting data</u> provided by the CJSOTF.
- 4. Assess capability of the <u>AOC TST systems to disseminate</u> targeting data provided by the CJSOTF.
- 5. Assess <u>suitability of M2MT systems</u> for operation in TST prosecution.
- 6. Assess impact of M2MT systems on current CJSOTF/ACO TTP.



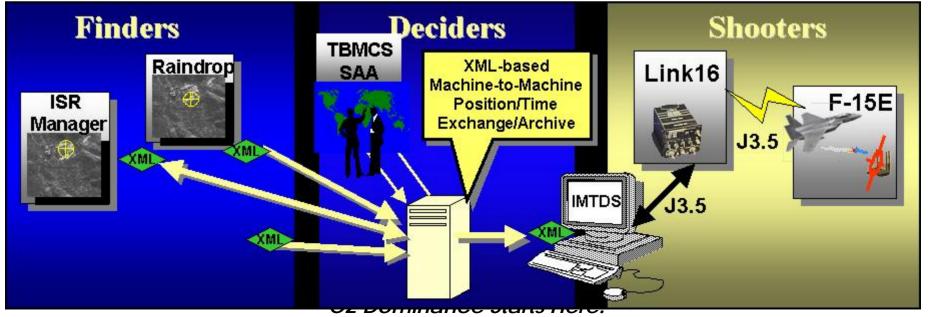
Interim (Part I) Summary

- Cursor on Target addressed larger C2 Integration
 - Demonstrations attracted SOF, ASC ST SPO & AFRL interest
- ASC, ESC, MITRE & AFRL combined acquisition efforts
 - New focus on SOF Integration, sub project named Cot-M2MT
 - SECAF Reviewed 22 Jan at Hurlburt Field; full demonstration
 - Brought SOF generated targets through AOC and into AWACS & F-15
 - SECAF directed fielding of demonstrated capability by April
- Lt Gen Looney directed ESC support integration & fielding
 - Test community fully engaged; CTF Event 10-14 Mar 03
 - Remaining issues: test outcome, accreditation, field testing-trainingdeployment & transition
- Request Transformation Center Oversight & Approval



Post M2MT: Re-engage Original CoT AOC Efforts

- Need to work plan with Transformation Center
 - Complete integration Raindrop & Bring thru TC
 - Scope out other ISR sources for integration in AOC
 - Scope out TBMCS SAA integration
 - Engage TC's Traditional RAP in full CoT integration potential
 - Raindrop, TBMCS, AC-130s, CAF-MAF, Cmbt Trk II, SADL, etc.





Overall Summary-Way Ahead

- Will TC & CCB approve CoT-M2MT fielding through involvement in Eglin CTF?
 - POCs and Path for M2MT regarding TC & CCB

- How shall CoT team engage TC's traditional RAP program?
 - POCs and path regarding continued CoT AOC integration after transitioning BAO Project to ST SPO

605th Test and Evaluation Squadron

C2 Dominance Starts Here!

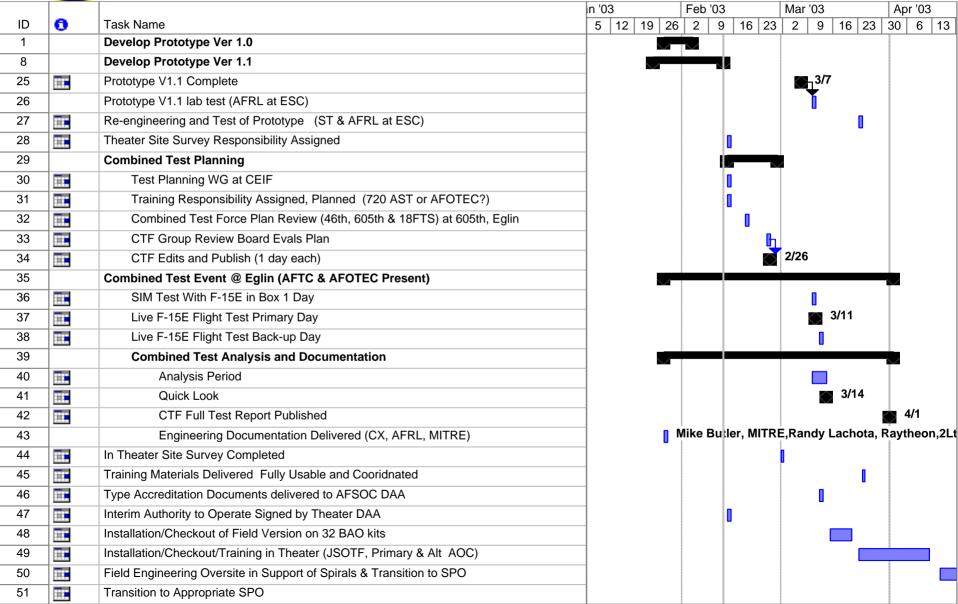
M2MT Backup Slides



This Briefing is: UNCLASSIFIED



Rapid Acquisition Project Underway to Create Operationally Viable M2MT Prototypes





M2MT Description & Purpose

- M2MT prototype implements interface using XML
 - Carry coordinates from SOF ST thru CJSOTF into AOC-TCT Cell, across ADSI into Link-16 for an airborne F-15E, without human transcription of the data.
- M2MT prototype implements interface using XML
 - Accelerate TCT Kill Chain
 - Fast, accurate transfer of PGM-quality coordinates
 - Reduced opportunity for human error fratricide
- Bigger Picture
 - Link legacy systems through new technology. Similar interface has many potential applications, e.g., passing target coordinates from SOF Special Tactics teams, and for Blue Force Tracking. Uses web technology: XML, IP-based comm, browser interface, and URLaddressable nodes
- Bottom Line
 - Free up aircrew to focus on other activities



Why This Is A Workable Enterprise Solution:

- Doesn't Try to Do Everything—Just the most important
 - Minimum set of key information common to all systems (Position, Time, Type, URL)
- Uses Simple Standards—Old or new systems can deal with it
 - Adaptable by nearly all systems with only modest efforts (from \$2 processors to \$200,000 terminals)
- Network-centric—<u>Avoids</u> locally-optimized <u>stovepipes</u>
 - Each new player is connected to all other existing players for free (connectivity costs grow as "N" users not "N squared")
- Readily Reconfigurable—Approach handles unforeseen needs
 - Using publish and subscribe, new 'finders', 'deciders', 'shooters', and mission threads can be created rapidly at end user locations without large-scale coordination



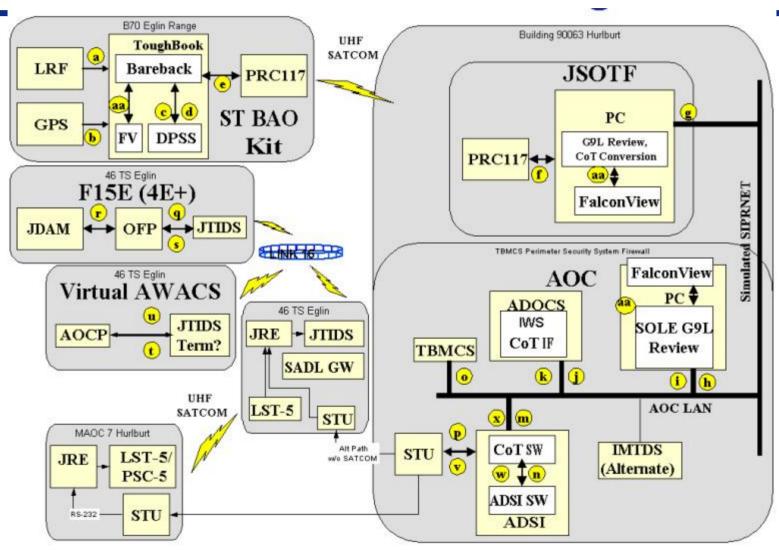
15 Nov 02 Nellis AFB Test Proved M2MT Works!

- Target Coordinates passed quickly, machine-to-machine, from coordinate mensuration tool, Raindrop, in CAOC-N, to airborne F-15Es using Cursor on Target XML interface and Link 16
- Investigating the precision of the coordinates on the F-15E, after receipt over Link 16. Are the coordinates GPS PGM-quality?





M2MT Test Key Data Nodes





Design - ST BAO Kit

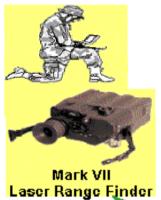


RANGE, ELEVATION

AND AZIMUTH TO TARGET IN MARK VII FORMAT

Tough Book Software

Falcon View -- Map Display Digital Precision Strike Suite -- Target Mensuration Bareback -- Digital interface/GUI connecting MK-7, PLGR, FV and DPSS Exports Compressed Binary Target Information (Cursor on Target schema used internally by Bareback and DPSS)







AN/PRC-117F Radio

COMPRESSED, ENCODED BLUE FORCE OR TARGET COORDINATES FOR TRANSMISSION IN PROPRIETARY ENCODED FORM





C2 Dominance Starts Here!



JSOTF Design

Tough Book Software

Falcon View -- Map Display
Digital Precision Strike Suite -- Target Mensuration
Get 9-Line -- Exports COT Schema XML
Cursor on Target -- XML target information schema

Ruggedized Computer Panasonic CF-M34

SIPRNET TO AOC SOLE

RECEIVED COMPRESSED, ENCODED BLUE FORCE OR TARGET COORDINATES IN PROPRIETARY ENCODED FORM

PUBLISH JS OTF APPROVED TARGETS IN COT SCHEMA XML

UHF SATCOM from ST BAO KIT



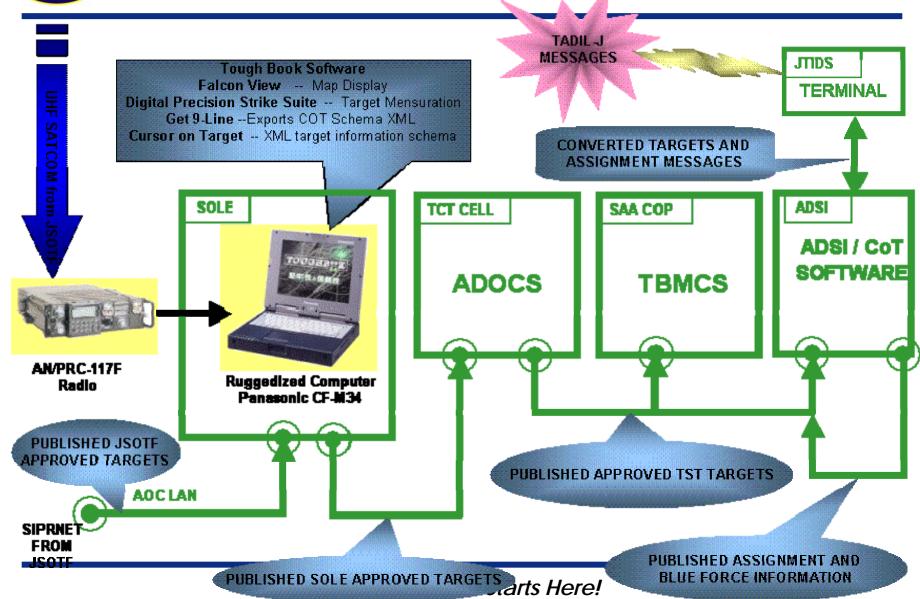
AN/PRC-117F Radio

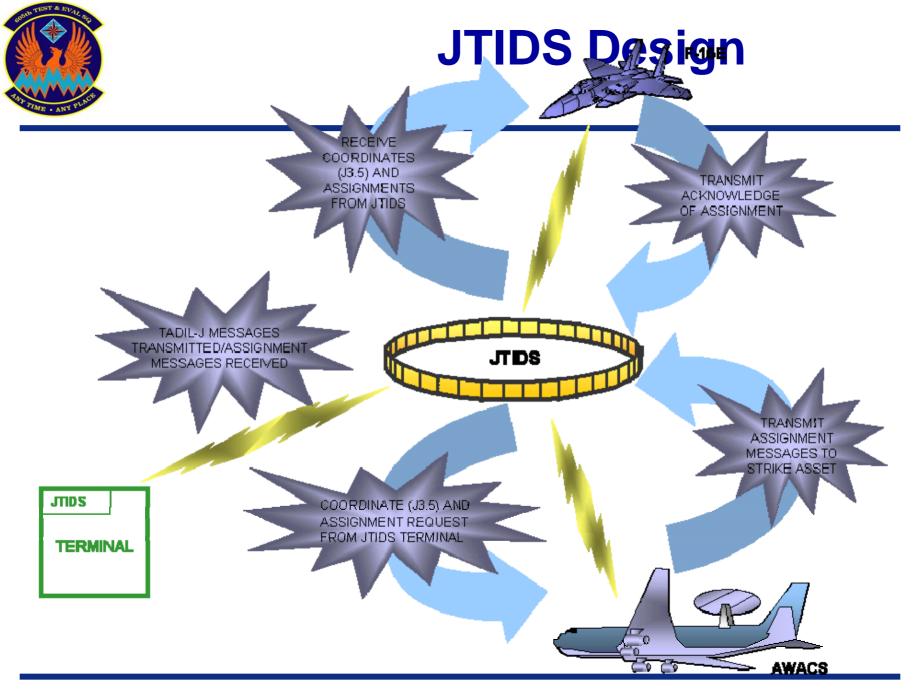


UHF SATCOM to ADC SOLE



AOC-TCT Design





C2 Dominance Starts Here!

STATE ANY PLACE

CoT-M2MT Fits Spiral Concept

